Amendments to the Claims: Please amend the claims as shown.

1-12 (canceled)

13. (currently amended) An eddy current measuring device, comprising:

a flexible base comprising a front surface that comes in contact with a test body;

a ~~single~~ signal coil;

an ~~single~~ excitation coil;

wherein the signal coil and the excitation coil are arranged in a planar form in a single layer on a rear surface of the flexible base; and

a flexible rear layer comprising a ferrite material that at least partially covers and contacts the signal coil and the excitation coil;

wherein the flexible base, the signal coil, the excitation coil, and the flexible rear layer are assembled in a flexible stack of layers that remains sufficiently flexible to allow the stack to be variably matched to radii of curvature on a surface of the test body.

14. (currently amended) The device as claimed in claim 13, wherein the flexible base is a flexible sheet with a thickness of about 25 microns, the coils each have a thickness of about 17 microns, and the ferrite material extends over a thickness of about 200-600 microns.

15. (previously presented) The device as claimed in claim 14, wherein the sheet is formed from polyimide.

16. (previously presented) The device as claimed in claim 13, wherein at least one of the two coils is made of copper.

17. (previously presented) The device as claimed in claim 13, wherein the flexible rear layer is formed by a polymer sheet filled with ferrite.

18. (canceled)

19. (previously presented) The device as claimed in claim 13, wherein the flexible rear layer is formed by a plastically deformable encapsulation compound filled with ferrite particles.

20. (canceled)

21. (previously presented) The device as claimed in claim 13, wherein the device has ferromagnetic signal amplification.

22. (canceled)

23. (previously presented) An eddy current measuring device, comprising:

a flexible base formed as a flexible sheet of polyimide;

a first electrical component connected to the flexible base;

a second electrical component connected to the flexible base; and

a rear layer comprising a flexible curable material encapsulating ferrite particles, the rear layer attached to at least one of the electrical components on a curved surface of the rear layer to match a curved surface of a test body;

wherein the flexible base, the first and second electrical components, and the rear layer collectively form an assembled stack that is flexible after curing of the curable material to variably conform to the curved surface of the test body.

24-25. (canceled)

26. (currently amended) The device as claimed in claim 23, wherein at least one coil is connected to the flexible base as an electrical component and is a copper coil with a thickness of about 17 microns, the flexible base has a thickness of about 25 microns, the ferrite powder comprises ferrite particles with a mean diameter of about 10 microns, and the flexible curable material extends over a thickness of about 200-600 microns.

27. (previously presented) The device as claimed in claim 23, wherein the device has ferromagnetic signal amplification.

28-30. (canceled)

31. (new) A method of producing a rigid electrical sensing probe from a flexible electrical sensing probe, comprising:

forming an flexible electrical sensing probe comprising a flexible sheet with a first surface for contact with a test body, an electrical coil attached in a single layer on a second surface of the flexible sheet, and a plastically deformable ferrite powder encapsulation material attached to the second surface of the flexible sheet and/or to the single layer of the electrical coil, to create a multi-layer flexible electrical sensing probe;

matching the flexible electrical sensing probe to a contoured surface of the test body; and

curing the encapsulation material to a state of reduced plasticity that produces the rigid electrical sensing probe permanently matched to the contoured surface of the test body.

32. (new) The method of claim 31, wherein the flexible sheet has a thickness of about 25 microns, the electrical coil is a copper coil with a thickness of about 17 microns, the ferrite powder comprises ferrite particles with a mean diameter of about 10 microns, and the encapsulation compound extends over a thickness of about 200-600 microns.